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*#12*  
PATENT APPLICATION

*LT/JS/OM*  
12/24/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

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: Examiner: K. Nguyen

KATSUYUKI KOBAYASHI, ET AL.

)  
: Group Art Unit: 2674

Application No.: 09/525,021

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Filed: March 14, 2000

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For: POSITION INFORMATION  
INPUT APPARATUS AND  
METHOD

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)

December 18, 2003

**RECEIVED**

DEC 19 2003

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Technology Center 2600

REQUEST FOR RECONSIDERATION

Sir:

In response to the Office Action dated September 25, 2003, Applicants respectfully request reconsideration and allowance of this application in view of the following remarks.

Claims 1-158 and 165-229 are pending in this application, with Claims 1, 45, 50, 76, 87, 130, 136, 142, 170, 214, and 226 being independent.

Claims 1-47, 50-75, 87-115, 127-158 and 165-228 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,341,155 (Elrod, et al.). Claim 229 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Elrod, et al. in view of U.S. Patent No. 6,050,690 (Shaffer, et al.). Claims 48, 49, 76-86, and 116-126 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Elrod, et al. in view of

U.S. Patent No. 5,504,501 (Hauck, et al.). Applicants respectfully traverse these rejections for the reasons discussed below.

As recited in independent Claim 1, the present invention includes, *inter alia*, the feature of generating, for each photoelectric conversion element, a difference signal corresponding to a difference between the output of the photoelectric conversion element when a light source cycle is at a first point and an output of the photoelectric conversion element when the light source cycle is at a second point. Each of the independent claims recites at least one of generating, receiving, or calculating such a difference signal. As disclosed in the specification, for example, at least at page 33, line 21 through page 36, line 15 and Fig. 9, this feature allows the claimed invention to achieve a stable coordinate input without being influenced by the level of ambient light.

Applicants submit that the cited art fails to disclose or suggest at least the above-mentioned feature. Elrod et al. discloses a position sensing photodiode having electrodes 76, 78, 80, and 82 arranged in an array corresponding to X+, X-, Y+, and Y- positions. However, that patent does not disclose or suggest generating a difference signal for each photoelectric conversion element. Instead, that patent discloses that a signal  $X_{sum}$  corresponds to a sum of the X+ and X- electrode current signals, and a signal  $X_{diff}$  corresponds to a difference between those electrode signals. In other words, Applicants submit that Elrod et al. discloses a difference signal between a *pair* of electrodes and not between *different outputs of the same photoelectric conversion element* at different points in a light source cycle. *See* Col. 6, lines 15-19 and 35-47.

Further, the T, F, M, R signals and the difference output means (100, 102, 104, 106) referred to by the Examiner at pages 2-3 of the Office Action do not relate to a

difference between outputs of a photoelectric conversion element at different points in a light source cycle. Instead, those components of Elrod, et al. relate to different *frequencies* corresponding to different button states of a light pen.

Also, the signal "C" (Figure 3a) referred to by the Examiner at page 3 of the Office Action is not a largest difference signal. The signal "C" is not a difference signal at all. Instead, signal "C" is a shunted signal from the  $X_{sum}$  sine wave. *See* Col. 6, lines 54-60. Thus, "C" is actually a sum signal, not a difference signal.

Applicants submit that the other cited art fails to cure the deficiencies of Elrod, et al.

Accordingly, Applicants submit that the present invention as recited in the independent claims is patentable over the art of record. Further, the dependent claims are patentable for at least the same reasons as the independent claims, as well as for the additional features they recite.

In view of the foregoing, Applicants submit that this application is in condition for allowance. Favorable reconsideration, withdrawal of the outstanding rejections, and an early Notice of Allowance are sought.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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